



1648

1648

RAW SEQUENCE LISTING
PATENT APPLICATION: US/09/214,701

DATE: 01/29/2002
TIME: 12:09:36

Input Set : D:\40646-20002.txt
Output Set: N:\CRF3\01292002\I214701.raw

4 <110> APPLICANT: Lowell, George
5 Vancott, Thomas
6 Birx, Deborah
8 <120> TITLE OF INVENTION: PROTEIN AND PEPTIDE VACCINES FOR
9 INDUCING MUCOSAL IMMUNITY
11 <130> FILE REFERENCE: 40646-20002.00
13 <140> CURRENT APPLICATION NUMBER: US 09/214,701
14 <141> CURRENT FILING DATE: 1999-09-30
16 <150> PRIOR APPLICATION NUMBER: PCT/US 97/12253
17 <151> PRIOR FILING DATE: 1997-07-10
19 <150> PRIOR APPLICATION NUMBER: US 60/021,687
20 <151> PRIOR FILING DATE: 1996-07-10
22 <160> NUMBER OF SEQ ID NOS: 18
24 <170> SOFTWARE: FastSEQ for Windows Version 4.0
26 <210> SEQ ID NO: 1
27 <211> LENGTH: 868
28 <212> TYPE: PRT
29 <213> ORGANISM: Virus HIV-1
31 <400> SEQUENCE: 1
32 Met Ala Met Arg Ala Lys Gly Ile Arg Lys Asn Cys Gln His Leu Trp
33 1 5 10 15
34 Arg Trp Gly Thr Met Leu Leu Gly Met Leu Met Ile Cys Ser Ala Ala
35 20 25 30
36 Ala Asn Leu Trp Val Thr Val Tyr Tyr Gly Val Pro Val Trp Lys Glu
37 35 40 45
38 Ala Thr Thr Thr Leu Phe Cys Ala Ser Asp Ala Lys Ala Tyr Asp Thr
39 50 55 60
40 Glu Ala His Asn Val Trp Ala Thr His Ala Cys Val Pro Thr Asn Pro
41 65 70 75 80
42 Asn Pro Gln Glu Val Val Leu Glu Asn Val Thr Glu Asn Phe Asn Met
43 85 90 95
44 Trp Lys Asn Asn Met Val Glu Gln Met His Glu Asp Ile Ile Ser Leu
45 100 105 110
46 Trp Asp Gln Ser Leu Lys Pro Cys Val Lys Leu Thr Pro Leu Cys Val
47 115 120 125
48 Thr Leu Asn Cys Thr Asp Leu Asn Thr Asn Asn Thr Thr Asn Thr Thr
49 130 135 140
50 Glu Leu Ser Ile Ile Val Val Trp Glu Gln Arg Gly Lys Gly Glu Met
51 145 150 155 160
52 Arg Asn Cys Ser Phe Asn Ile Thr Thr Ser Ile Arg Asp Lys Val Gln
53 165 170 175
54 Arg Glu Tyr Ala Leu Phe Tyr Lys Leu Asp Val Glu Pro Ile Asp Asp
55 180 185 190

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56 Asn Lys Asn Thr Thr Asn Asn Thr Lys Tyr Arg Leu Ile Asn Cys Asn
57 195 200 205
58 Thr Ser Val Ile Thr Gln Ala Cys Pro Lys Val Ser Phe Glu Pro Ile
59 210 215 220
60 Pro Ile His Tyr Cys Thr Pro Thr Gly Phe Ala Leu Leu Lys Cys Asn
61 225 230 235 240
62 Asp Lys Lys Phe Asn Gly Thr Gly Pro Cys Thr Asn Val Ser Thr Val
63 245 250 255
64 Gln Cys Thr His Gly Ile Arg Pro Val Val Ser Thr Gln Leu Leu Leu
65 260 265 270
66 Asn Gly Ser Leu Ala Glu Glu Val Val Ile Arg Ser Glu Asn Phe
67 275 280 285
68 Thr Asn Asn Ala Lys Thr Ile Ile Val Gln Leu Asn Val Ser Val Glu
69 290 295 300
70 Ile Asn Cys Thr Arg Pro Asn Asn His Thr Arg Lys Arg Val Thr Leu
71 305 310 315 320
72 Gly Pro Gly Arg Val Trp Tyr Thr Thr Gly Glu Ile Leu Gly Asn Ile
73 325 330 335
74 Arg Gln Ala His Cys Asn Ile Ser Arg Ala Gln Trp Asn Asn Thr Leu
75 340 345 350
76 Gln Gln Ile Ala Thr Thr Leu Arg Glu Gln Phe Gly Asn Lys Thr Ile
77 355 360 365
78 Ala Phe Asn Gln Ser Ser Gly Gly Asp Pro Glu Ile Val Met His Ser
79 370 375 380
80 Phe Asn Cys Gly Gly Glu Phe Phe Tyr Cys Asn Ser Thr Gln Leu Phe
81 385 390 395 400
82 Asn Ser Ala Trp Asn Val Thr Ser Asn Gly Thr Trp Ser Val Thr Arg
83 405 410 415
84 Lys Gln Lys Asp Thr Gly Asp Ile Ile Thr Leu Pro Cys Arg Ile Lys
85 420 425 430
86 Gln Ile Ile Asn Arg Trp Gln Val Val Gly Lys Ala Met Tyr Ala Leu
87 435 440 445
88 Pro Ile Lys Gly Leu Ile Arg Cys Ser Ser Asn Ile Thr Gly Leu Leu
89 450 455 460
90 Leu Thr Arg Asp Gly Gly Glu Asn Gln Thr Thr Glu Ile Phe Arg
91 465 470 475 480
92 Pro Gly Gly Asp Met Arg Asp Asn Trp Arg Ser Glu Leu Tyr Lys
93 485 490 495
94 Tyr Lys Val Val Lys Ile Glu Pro Leu Gly Val Ala Pro Thr Lys Ala
95 500 505 510
96 Lys Arg Arg Val Val Gln Arg Glu Lys Arg Ala Val Gly Met Leu Gly
97 515 520 525
98 Ala Met Phe Leu Gly Phe Leu Gly Ala Ala Gly Ser Thr Met Gly Ala
99 530 535 540
100 Thr Ser Met Ala Leu Thr Val Gln Ala Arg Gln Leu Leu Ser Gly Ile
101 545 550 555 560
102 Val Gln Gln Gln Asn Asn Leu Leu Arg Ala Ile Lys Ala Gln Gln His
103 565 570 575
104 Leu Leu Gln Leu Thr Val Trp Gly Ile Lys Gln Leu Gln Ala Arg Ile

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105	580	585	590
106	Leu Ala Val Glu Arg Tyr Leu Lys Asp Gln Gln Leu Leu Gly Phe Trp		
107	595	600	605
108	Gly Cys Ser Gly Lys Leu Ile Cys Thr Thr Ala Val Pro Trp Asn Ala		
109	610	615	620
110	Ser Trp Ser Asn Lys Thr Leu Asp Gln Ile Trp Asn Asn Met Thr Trp		
111	625	630	635
112	Met Glu Trp Asp Arg Glu Ile Asp Asn Tyr Thr His Leu Ile Tyr Thr		
113	645	650	655
114	Leu Ile Glu Glu Ser Gln Asn Gln Gln Glu Lys Asn Gln Gln Glu Leu		
115	660	665	670
116	Leu Gln Leu Asp Lys Trp Ala Ser Leu Trp Thr Trp Ser Asp Ile Thr		
117	675	680	685
118	Lys Trp Leu Trp Tyr Ile Lys Ile Phe Ile Met Ile Val Gly Gly Leu		
119	690	695	700
120	Ile Gly Leu Arg Ile Val Phe Ala Val Leu Ser Ile Val Asn Arg Val		
121	705	710	715
122	Arg Gln Gly Tyr Ser Pro Leu Ser Phe Gln Thr Leu Leu Pro Asn Pro		
123	725	730	735
124	Arg Gly Pro Asp Arg Pro Glu Gly Thr Glu Glu Gly Gly Glu Arg		
125	740	745	750
126	Gly Arg Asp Gly Ser Thr Arg Leu Val His Gly Phe Leu Ala Leu Val		
127	755	760	765
128	Trp Asp Asp Leu Arg Ser Leu Cys Leu Phe Ser Tyr His Arg Leu Arg		
129	770	775	780
130	Asp Leu Leu Ile Val Ala Arg Ile Val Glu Leu Leu Gly Arg Arg		
131	785	790	795
132	Gly Trp Glu Val Leu Lys Tyr Trp Trp Asn Leu Leu Gln Tyr Trp Ser		
133	805	810	815
134	Gln Glu Leu Lys Asn Ser Ala Val Ser Leu Val Asn Val Thr Ala Ile		
135	820	825	830
136	Ala Val Ala Glu Gly Thr Asp Arg Val Ile Glu Val Val Gln Arg Ile		
137	835	840	845
138	Tyr Arg Ala Phe Leu His Ile Pro Arg Arg Ile Arg Gln Gly Phe Glu		
139	850	855	860
140	Arg Ala Leu Leu		
141	865		
143	<210> SEQ ID NO: 2		
144	<211> LENGTH: 5		
145	<212> TYPE: PRT		
146	<213> ORGANISM: Artificial Sequence		
148	<220> FEATURE:		
149	<223> OTHER INFORMATION: Hydrophobic peptide added to the terminus of the		
150	antigenic peptide		
152	<400> SEQUENCE: 2		
153	Phe Leu Leu Ala Val		
154	1	5	
156	<210> SEQ ID NO: 3		
157	<211> LENGTH: 5		

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158 <212> TYPE: PRT
159 <213> ORGANISM: Artificial Sequence
161 <220> FEATURE:
162 <223> OTHER INFORMATION: Hydrophobic peptide added to the terminus of the
163 antigenic peptide
165 <400> SEQUENCE: 3
166 Val Ala Leu Leu Phe
167 1 5
169 <210> SEQ ID NO: 4
170 <211> LENGTH: 10
171 <212> TYPE: PRT
172 <213> ORGANISM: Artificial Sequence
174 <220> FEATURE:
175 <223> OTHER INFORMATION: Hydrophobic decapeptide
177 <400> SEQUENCE: 4
178 Gly Gly Tyr Cys Phe Val Ala Leu Leu Phe
179 1 5 10
181 <210> SEQ ID NO: 5
182 <211> LENGTH: 68
183 <212> TYPE: PRT
184 <213> ORGANISM: P. falciparum
186 <400> SEQUENCE: 5
187 Asn Ala Asn Pro Asn Ala Asn Pro Asn Ala Asn Pro Asn Ala Asn Pro
188 1 5 10 15
189 Asn Ala Asn Pro Asn Ala Asn Pro Asn Ala Asn Pro Asn Ala Asn Pro
190 20 25 30
191 Asn Ala Asn Pro Asn Ala Asn Pro Asn Ala Asn Pro Asn Ala Asn Pro
192 35 40 45
193 Asn Ala Asn Pro Asn Ala Asn Pro Asn Ala Asn Pro Asn Val Asp Pro
194 50 55 60
195 Asn Val Asp Pro
196 65
198 <210> SEQ ID NO: 6
199 <211> LENGTH: 20
200 <212> TYPE: DNA
201 <213> ORGANISM: Artificial Sequence
203 <220> FEATURE:
204 <223> OTHER INFORMATION: Synthetic linker
206 <400> SEQUENCE: 6
207 gatccgggt gactgactga
209 <210> SEQ ID NO: 7
210 <211> LENGTH: 20
211 <212> TYPE: DNA
212 <213> ORGANISM: Artificial Sequence
214 <220> FEATURE:
215 <223> OTHER INFORMATION: Synthetic linker
217 <400> SEQUENCE: 7
218 gatctcagtc agtcacccgg
220 <210> SEQ ID NO: 8

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Input Set : D:\40646-20002.txt
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221 <211> LENGTH: 16
222 <212> TYPE: PRT
223 <213> ORGANISM: Artificial Sequence
225 <220> FEATURE:
226 <223> OTHER INFORMATION: Synthetic oligopeptide
228 <400> SEQUENCE: 8
229 Gly Asn Val Gln Ala Ala Lys Asp Gly Gly Asn Thr Ala Ala Gly Arg
230 1 5 10 15
232 <210> SEQ ID NO: 9
233 <211> LENGTH: 16
234 <212> TYPE: PRT
235 <213> ORGANISM: Artificial Sequence
237 <220> FEATURE:
238 <223> OTHER INFORMATION: Trypanosomal peptide pepG
240 <400> SEQUENCE: 9
241 Tyr Gly Gly Gly Cys Thr Gln Ile Thr Glu Pro Thr Cys Asn Ser Ser
242 1 5 10 15
244 <210> SEQ ID NO: 10
245 <211> LENGTH: 10
246 <212> TYPE: PRT
247 <213> ORGANISM: Artificial Sequence
249 <220> FEATURE:
250 <223> OTHER INFORMATION: Trypanosomal peptide pepM1
252 <400> SEQUENCE: 10
253 Tyr Gly Val Pro Val Ala Thr Gln Thr Gly
254 1 5 10
256 <210> SEQ ID NO: 11
257 <211> LENGTH: 12
258 <212> TYPE: PRT
259 <213> ORGANISM: Artificial Sequence
261 <220> FEATURE:
262 <223> OTHER INFORMATION: Trypanosomal peptide pepCM1
264 <400> SEQUENCE: 11
265 Cys Tyr Gly Val Pro Val Ala Gln Thr Gln Thr Gly
266 1 5 10
268 <210> SEQ ID NO: 12
269 <211> LENGTH: 30
270 <212> TYPE: PRT
271 <213> ORGANISM: Artificial Sequence
273 <220> FEATURE:
274 <223> OTHER INFORMATION: Trypanosomal peptide pepCM3
276 <400> SEQUENCE: 12
277 Cys Tyr Gly Val Pro Val Ala Gln Thr Gln Thr Gly Val Pro Val Ala
278 1 5 10 15
279 Gln Thr Gln Thr Gly Val Pro Val Ala Gln Thr Gln Thr Gly
280 20 25 30
282 <210> SEQ ID NO: 13
283 <211> LENGTH: 47
284 <212> TYPE: PRT

VERIFICATION SUMMARY
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